

TWPC Contract Re-Bid Presentation

April 23, 2008

Presented By:

Bill McMillan

Jim Moore



EM *Environmental Management*

safety ❖ performance ❖ cleanup ❖ closure

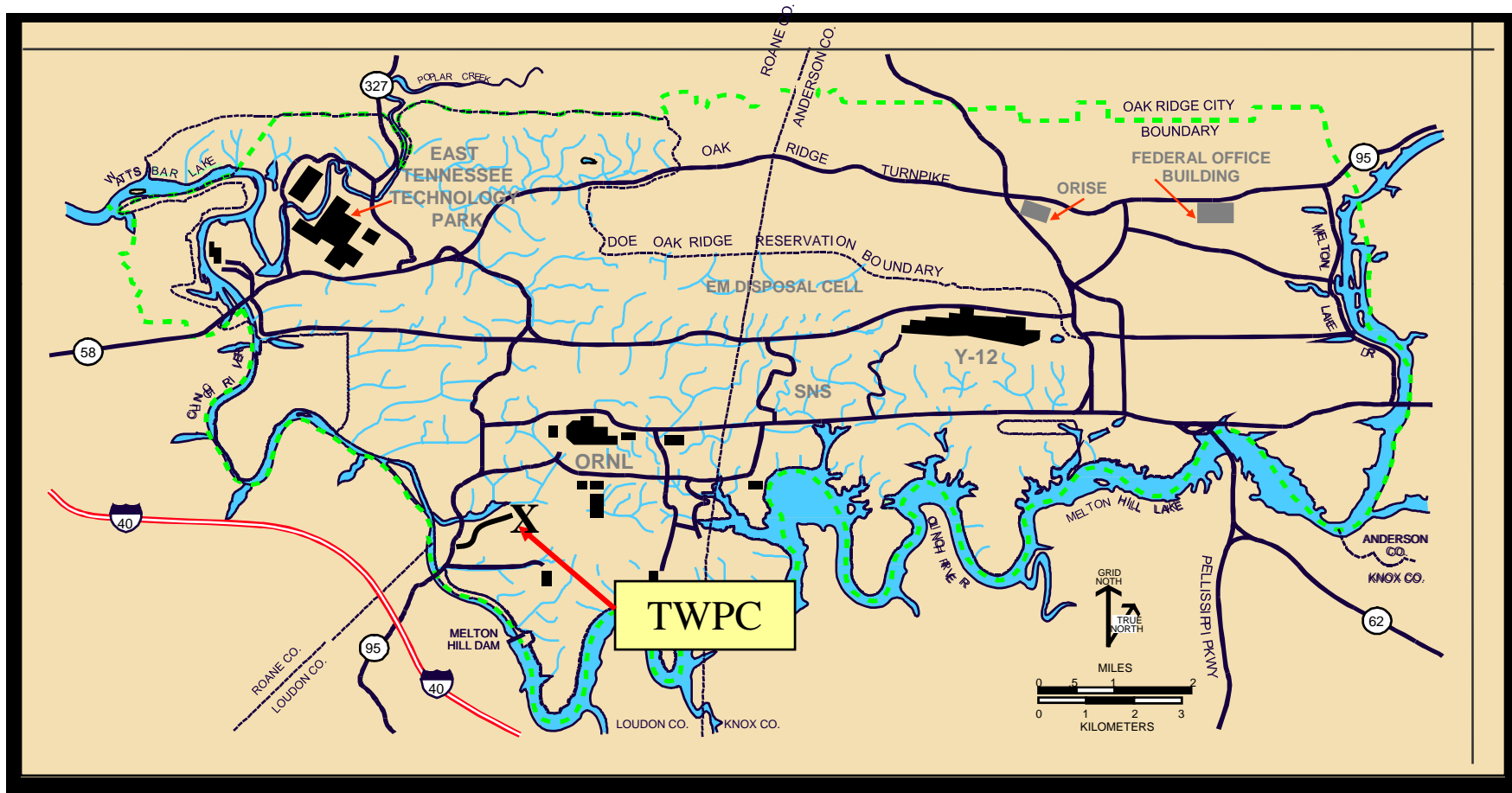
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TWPC Contract Re-Bid Presentation

- Purpose
 - Overview Facility and Operations
 - Provide a virtual tour of the facilities
 - Additional information is available on the DOE website established for this procurement



Site Overview



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Site Overview



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Site Overview



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Site Overview



MVST

MVST-CI

TWPC

CHMB



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Site Overview

Bldg 7883,
RH Bunker

Bldg 7856,
MVST-CI

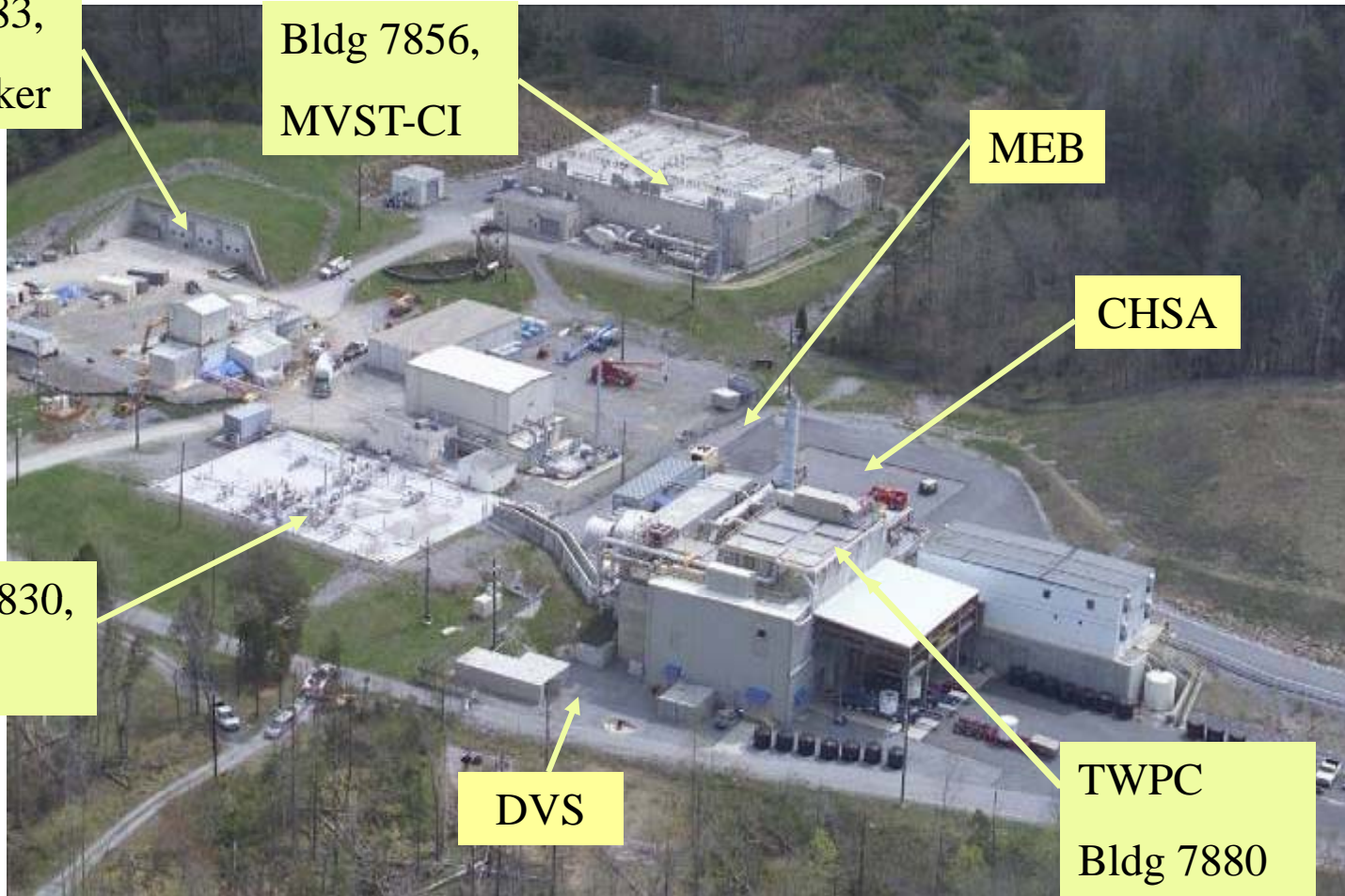
MEB

CHSA

Bldg 7830,
MVST

DVS

TWPC
Bldg 7880



TWPC Site
(Looking SE)



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Site Overview

Personnel Building,
7880B

Processing
Building, 7880

CHSA,
7880A



TRU Waste Processing Center
(Looking North)



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TWPC Waste Streams

- Supernate: Completed October 2004
- CH TRU Debris and Soils: ~1,000 m³ (drums & boxes)
- RH TRU Debris and Soils: ~500 m³ (Concrete casks & drums)
- RH Sludge and Supernate: 2,000 m³ (Stored in SST tanks)



TWPC Contractor Interfaces

- TWPC: Operating Contractor
- BJC
 - TRU debris and soils waste deliveries
 - Sludge & Supernate mobilization, mixing & transfers from W-35
- CCP
 - TRU waste characterization: NDA/NDE/VE (LLW characterization data is a by-product)
 - TRU Waste Certification
 - TRU waste shipment
 - Drum Vent System operation (Primarily for overpacked drums)
- UT-B: Fire Protection & Emergency Response
- Wackenhut: Physical Plant Security



CH TRU Debris and Soils

- ~1,000 m³ (drums & boxes)
- Operations In Process: Started Dec. 2005
- Processing Rate Required: 400 m³/yr



Waste Entering from ORNL/BJC



Backing up driveway to CHSA

CH TRU Debris and Soils

CH TRU Waste Box Delivery from BJC to TWPC



Boxes being unloaded @ CHSA



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Waste Entering from ORNL/BJC



Backing up driveway to CHSA

CH TRU Debris and Soils

CH TRU Waste Drum (In Transfer Container) Delivery from BJC



Transfer Container @ CHSA



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CH TRU Debris and Soils

Drum Venting Chamber



Drum Venting Building
(DVB) (Looking East)



Drum Venting System (DVS)



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Transfer Container @ CHSA



CH TRU Debris and Soils

CH TRU Waste Drum Delivery from BJC to TWPC



Rad Dose Survey



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Preparing to Remove Drums

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CH TRU Debris and Soils



CHSA (Looking North)



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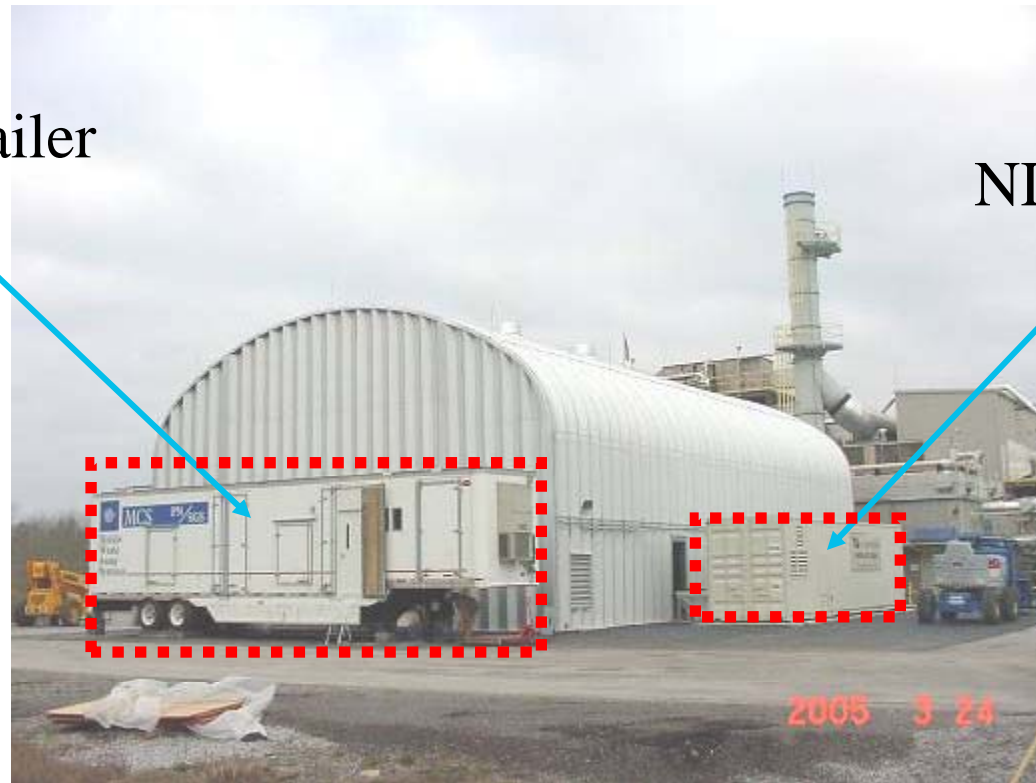


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CH TRU Debris and Soils

NDA Trailer

NDE Trailer



CHSA (Looking NW)



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CH TRU Debris and Soils



TRU Waste Processing Center
(Looking North)

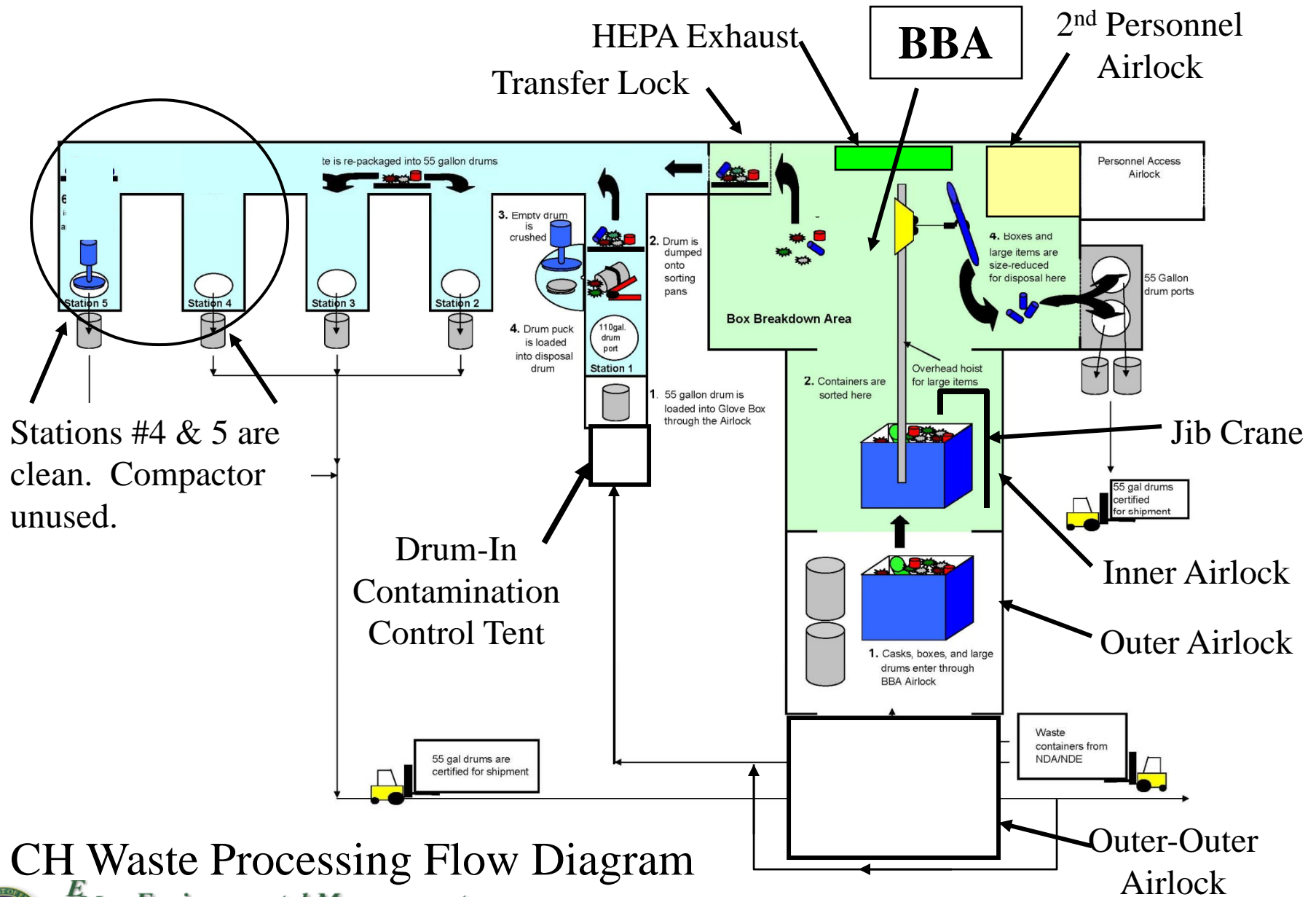


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CH TRU Debris and Soils



CH Waste Processing Flow Diagram



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Glovebox Station #1



CH TRU Debris and Soils



Drum-in Contamination Control Tent



Drum Tipper
Waste Trays

GB Drum-Out



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CH TRU Debris and Soils



Drum Out Location

Glovebox Station #1

Empty Drum Compactor



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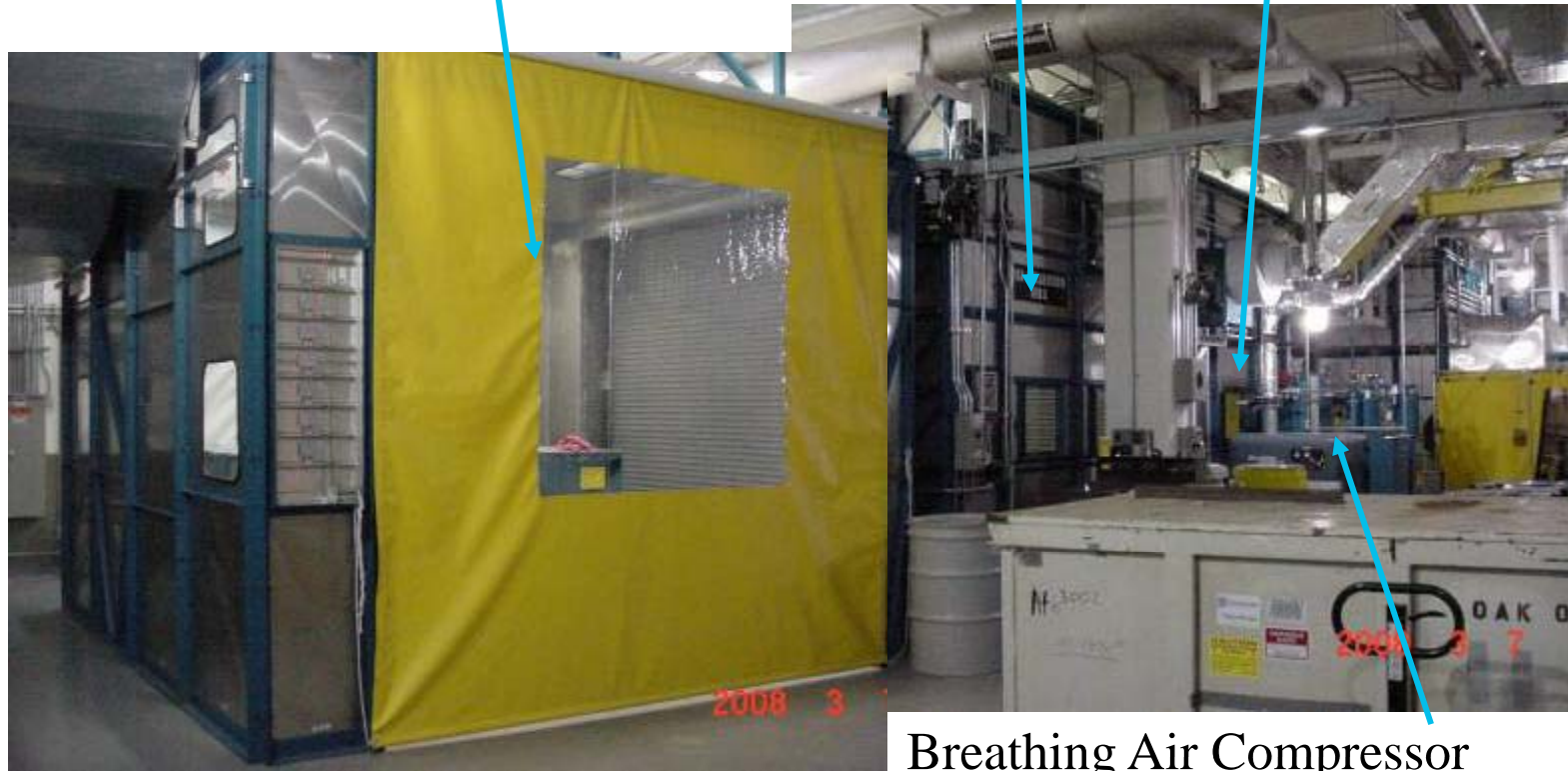
CH TRU Debris and Soils

Box Breakdown Area (BBA)

Outer-Outer Airlock

Outer Airlock

Inner Airlock



Breathing Air Compressor



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CH TRU Debris and Soils

BBA Operations



2nd Personnel Entry Airlock

Drum-Out Area

Bubble-Suited Operators



Drum-Out (Outside BBA)



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CH TRU Debris and Soils



DAC Trailers



Room 122 Flam-Gas



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CH TRU Debris and Soils

CH TRU Waste Transfers to CHMB



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CH TRU Debris and Soils

TRUPACT-II Loading



CHMB (Looking SW)
1200 drum max. capacity



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CH TRU Debris and Soils

TRUPACT-IIs

(up to 14 drums in each)



**TRUPACT-II Shipment
Nearing WIPP**



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CH TRU Debris and Soils

Macroencapsulation Bldg

- 6 MLLW drums/box
- Foam filled
- Plastic Inner Box, Heat Sealed Lid



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CH TRU Debris and Soils



Loading LLW, Ship to NTS



Loading MLLW, Ship to NTS



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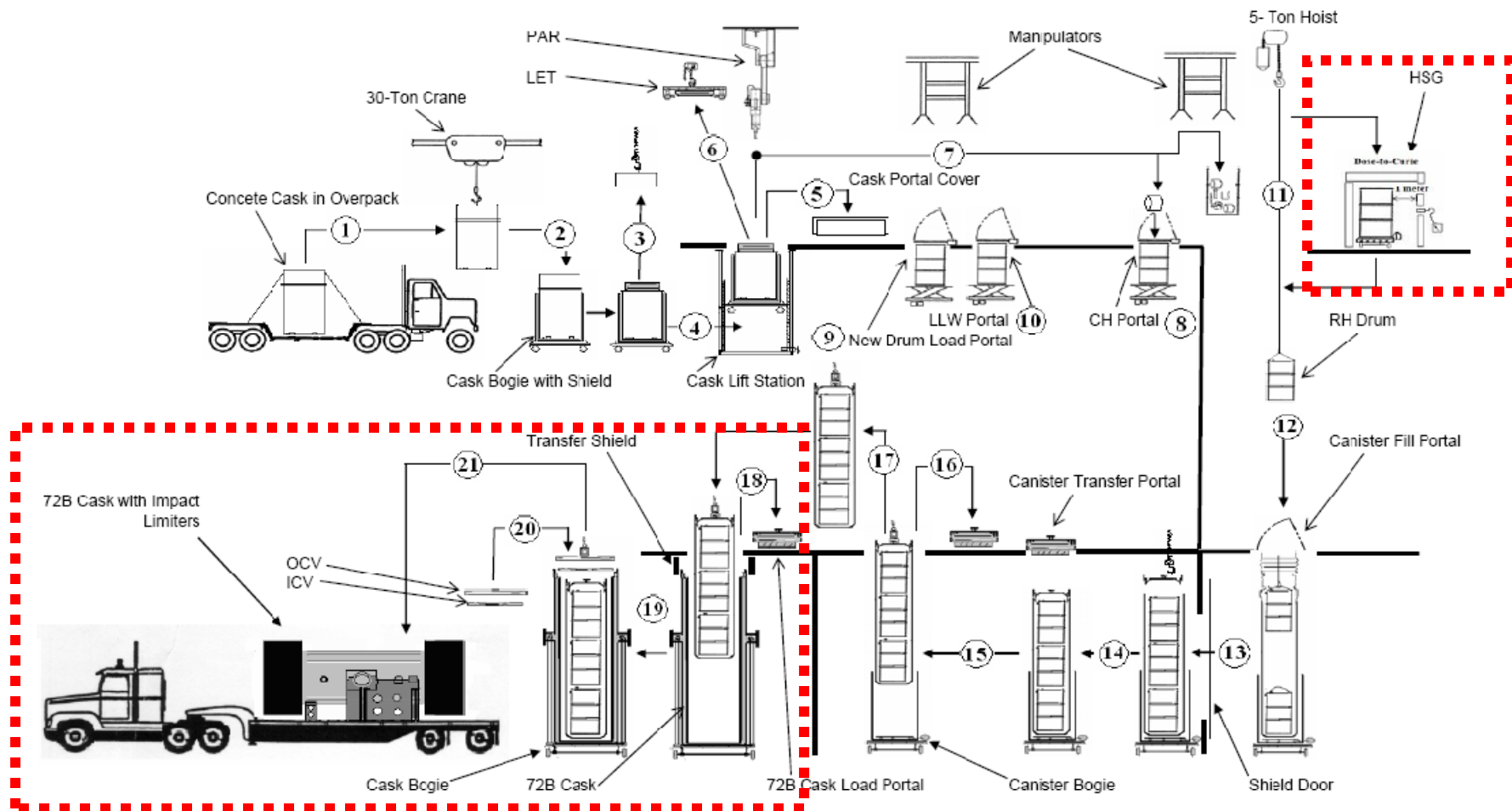
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RH TRU Debris and Soils

- ~500 m³ (Concrete casks & drums)
- Forecasted Hot Ops Start: May 19, 2008
- Processing Rate Required: 200 m³/yr



RH TRU Debris and Soils



21-Step RH TRU Process



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RH TRU Debris and Soils

TWPC (Looking East)



RH Concrete
Cask Door

72B Cask Door

72B Canister Door



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RH TRU Debris and Soils

RH TRU Overpacked Cask Transfer from BJC to TWPC



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RH Cask Bogie Lift

RH TRU Debris and Soils



Room 127, RH Cask AirLock

Cask Bag-In
Ring

Cask Bag
Heat Sealer



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RH TRU Debris and Soils

RH Cask & Bogie



Cask Bogie on Lift



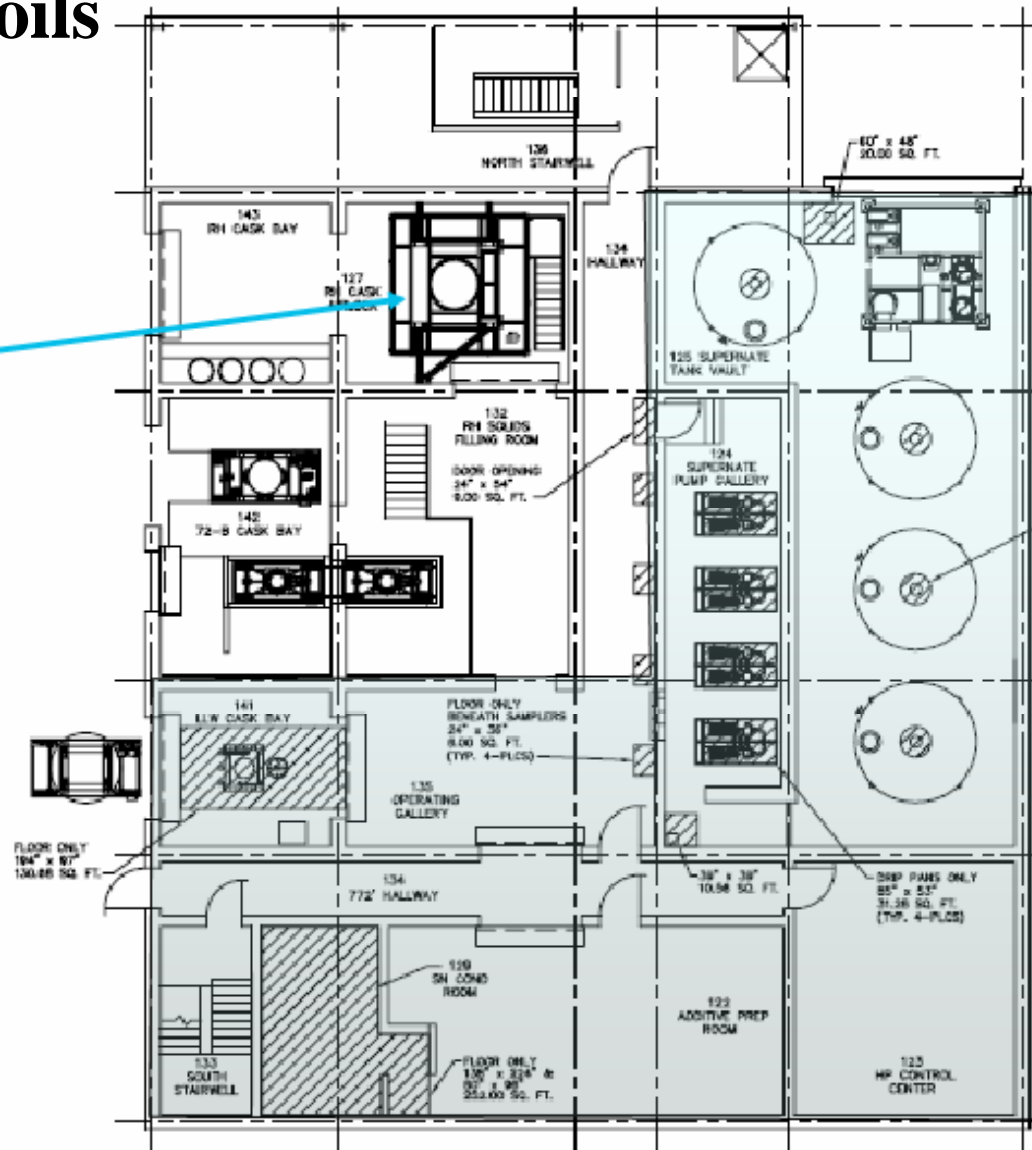
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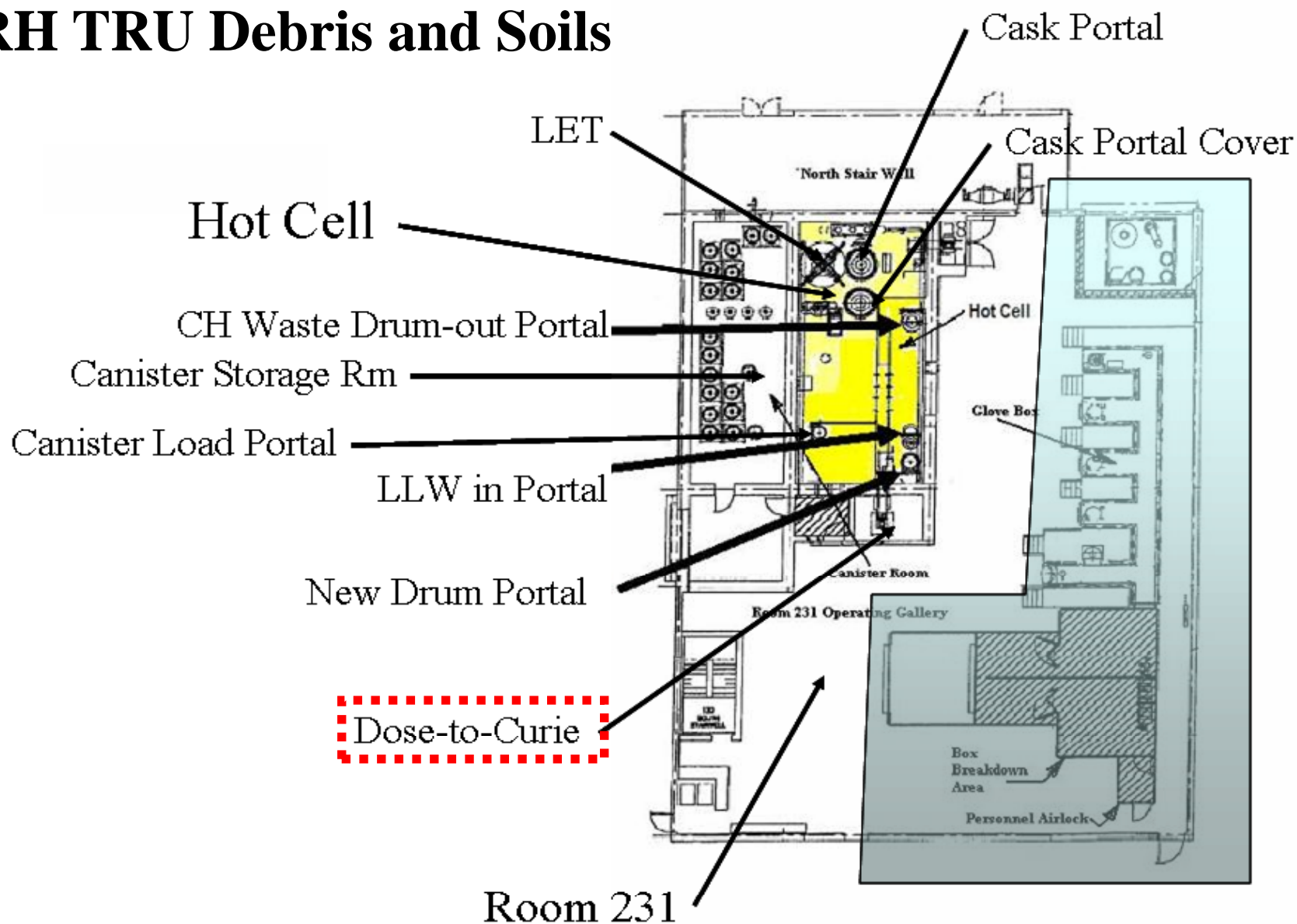
RH TRU Debris and Soils

Room 127, RH Cask Airlock



TWPC 1st Floor

RH TRU Debris and Soils



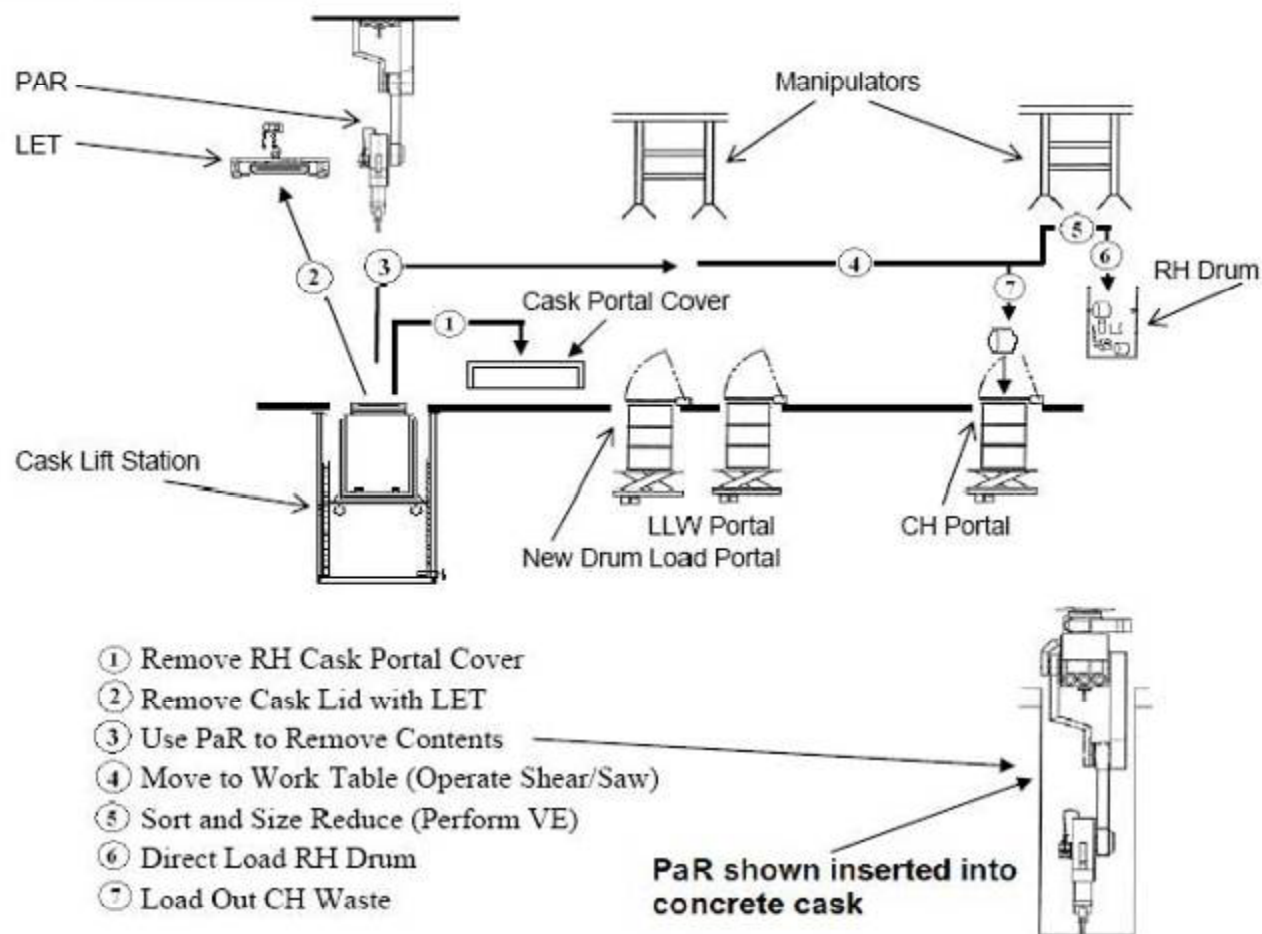
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RH TRU Debris and Soils

Hot Cell Operations - Review



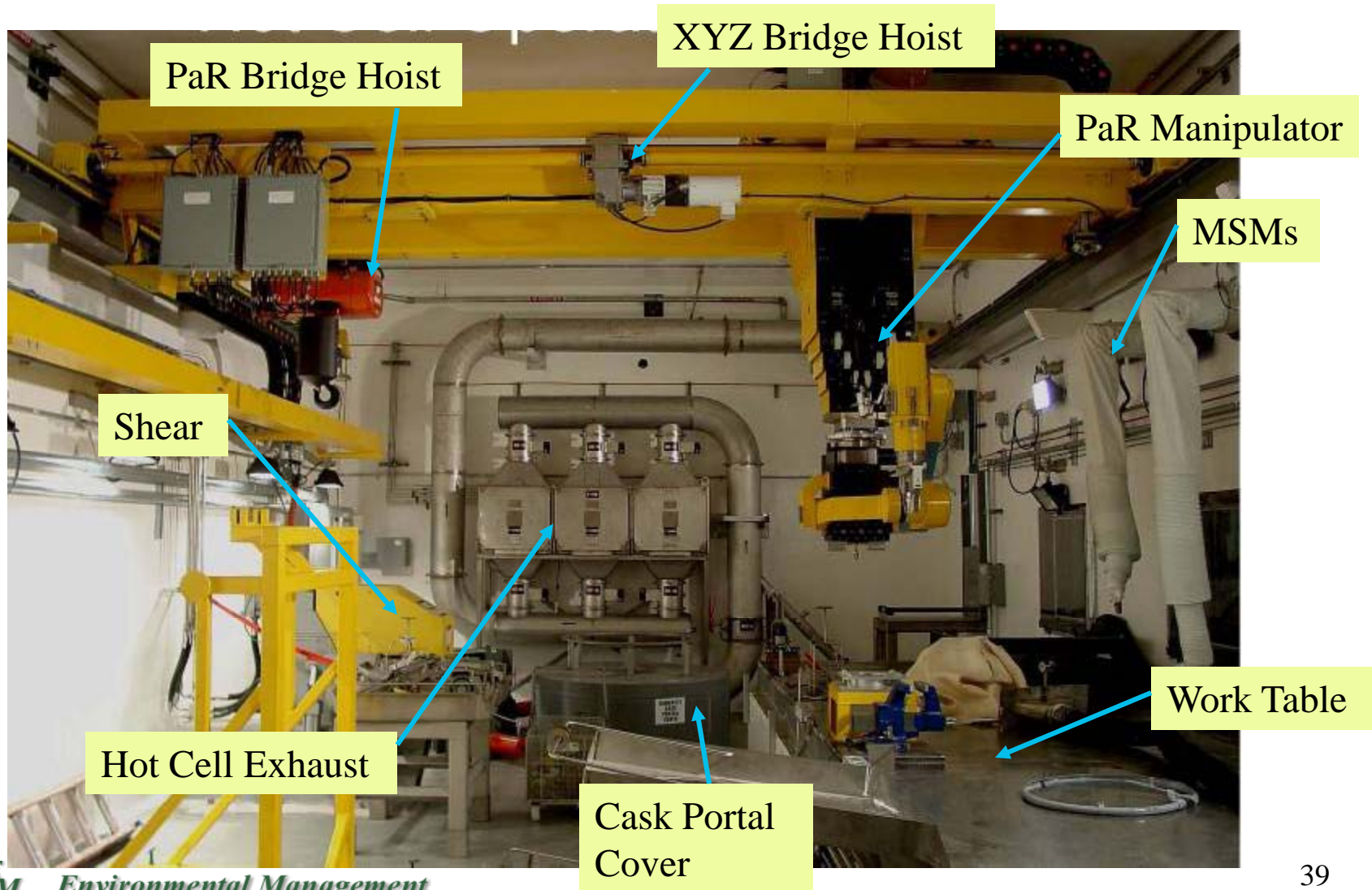
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RH TRU Debris and Soils

Hot Cell



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RH TRU Debris and Soils

Room 231, Major Hot Cell Equipment

- 1-XYZ Crane Joy Stick Controls
- 2-Control Panel for Hydraulics & Portal Operators
- 3-Control Panel & Camera System
- 4-PaR Joy Stick Controls
- 5-Master-Slave Manipulators (MSMs)



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RH TRU Debris and Soils

RH Cask Portal Cover



Lid Extraction Tool



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RH TRU Debris and Soils



Dose-to-Curie Access



Dose-to-Curie Carriage



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RH TRU Debris and Soils



Room 231,
DTC Access
Shield Doors

DTC Enclosure

Hot Cell Wall

Dose-to-Curie



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RH TRU Debris and Soils



72B Canister to Hot Cell Sleeve



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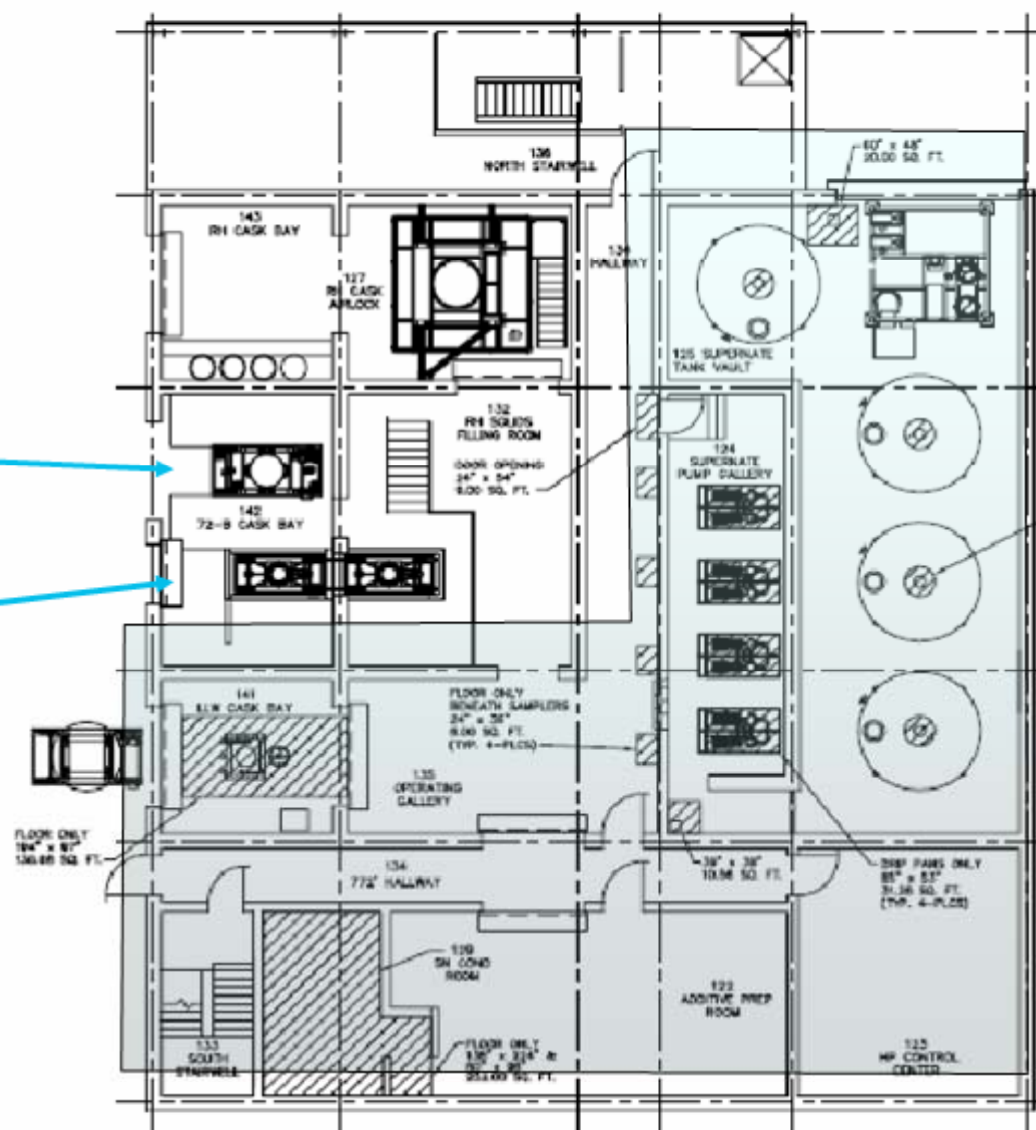
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RH TRU Debris and Soils

Room 142, 72B Cask Bay

72B Canister Loading Area

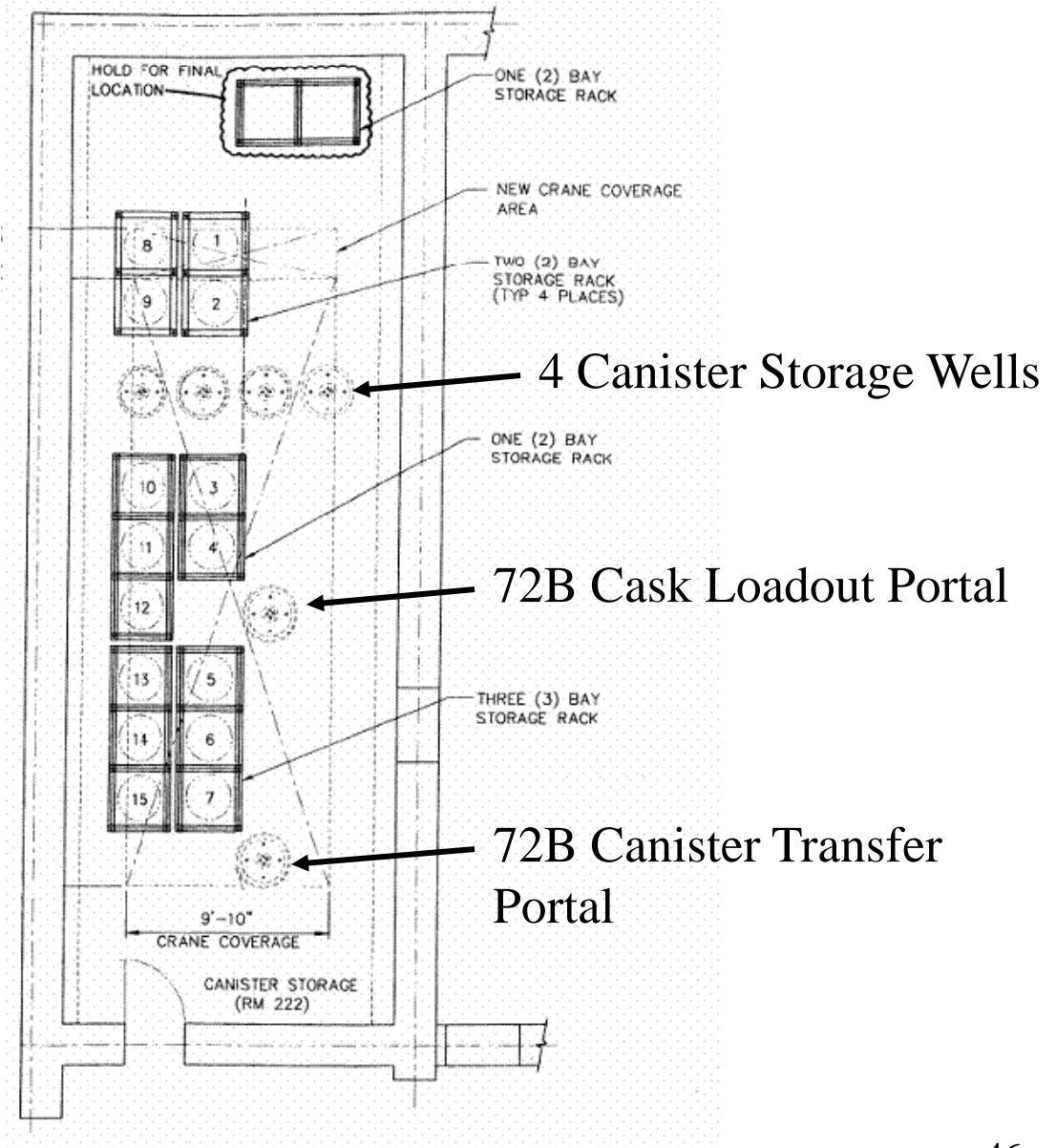


TWPC 1st Floor



RH TRU Debris and Soils

Room 222, Canister
Storage Room --
Canister Layout
(19 max.)



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RH TRU Debris and Soils



Room 142, 72B Canister-to-Cask Loading Shield



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RH TRU Debris and Soils



RH 72B Cask and Trailer



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RH TRU Debris and Soils

72B Cask Bogie

72B Canister Bogie



72B Cask and Canister Bogies



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RH TRU Debris and Soils

72B Canister and Bogie



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RH Sludge and Supernate

- 2,000 m³ (Stored in SST tanks)
- Forecasted Hot Ops Start Date: February 2013
- Processing Rate Required: 450 m³/yr



RH Sludge and Supernate

RH Sludge Mobilization

- Contractor takes responsibility for MVST prior to installation of equipment
- AEAT (Now NuVision) Pulsed Jet Mixer used in previous BJC activities
- Contractor responsible for MVST Sludge Mobilization
- Tank W-35 (of MVST-CI) in the current baseline as batch sampling tank.
- Mobilization and transfers from W-35 by others



RH Sludge and Supernate

MVST P&VV

MVST (Bldg 7830)
(Looking East)



MVST-CI (Bldg 7856)
(Looking Southeast)

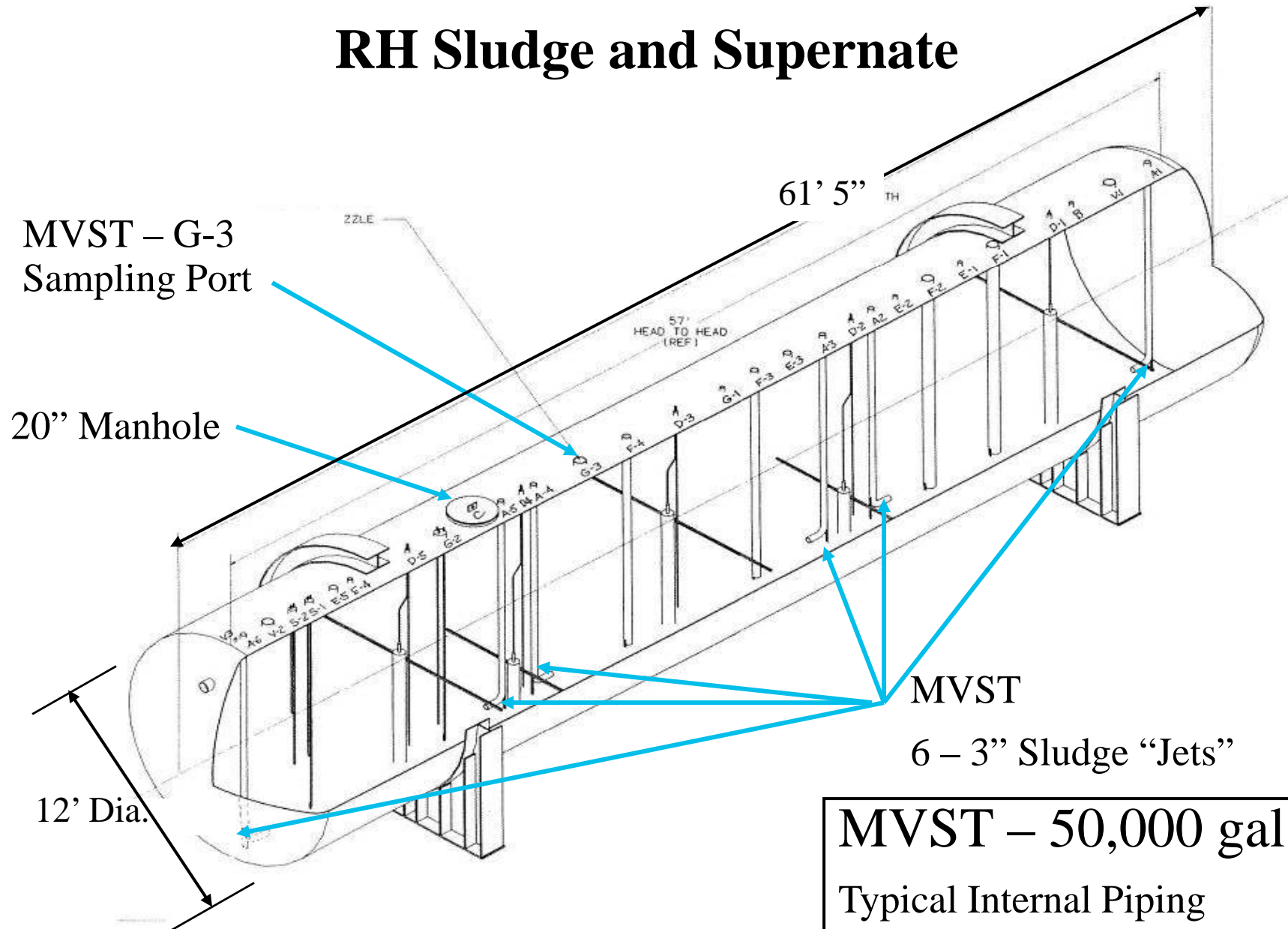


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RH Sludge and Supernate



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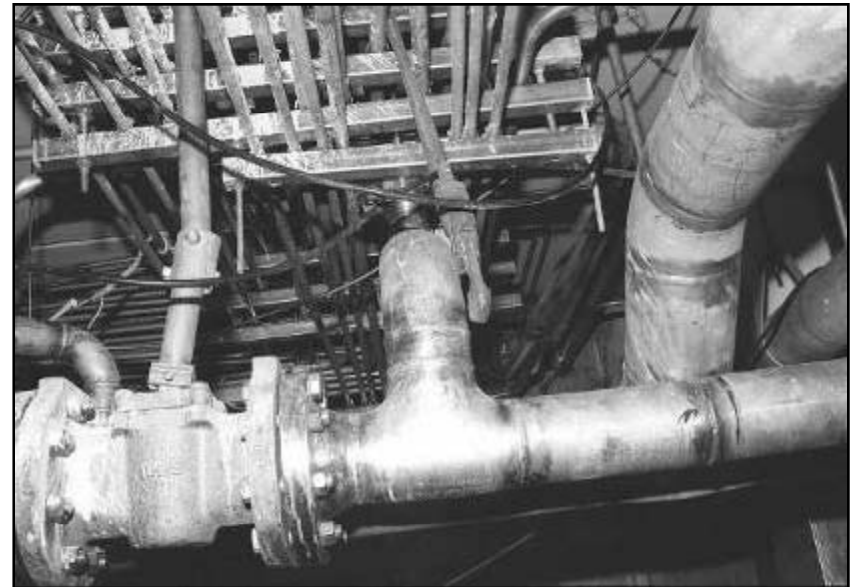
RH Sludge and Supernate



MVST P&VV Entrance



P&VV Internal Piping

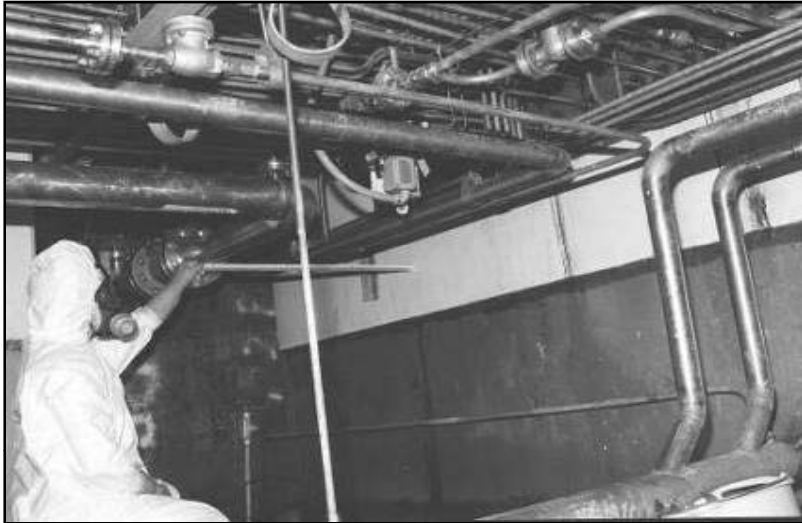


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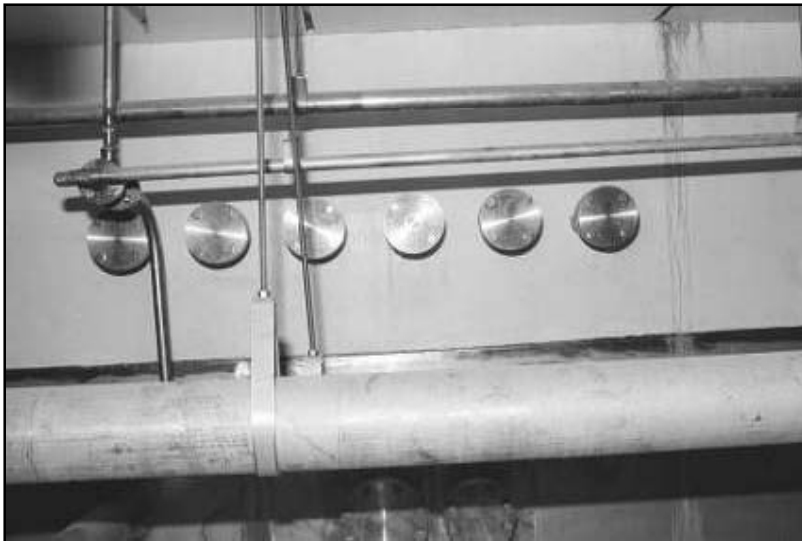
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RH Sludge and Supernate



MVST P&VV
Internal Piping



6 – 3” Pipe Sludge “Jet” Flanges/ Tank



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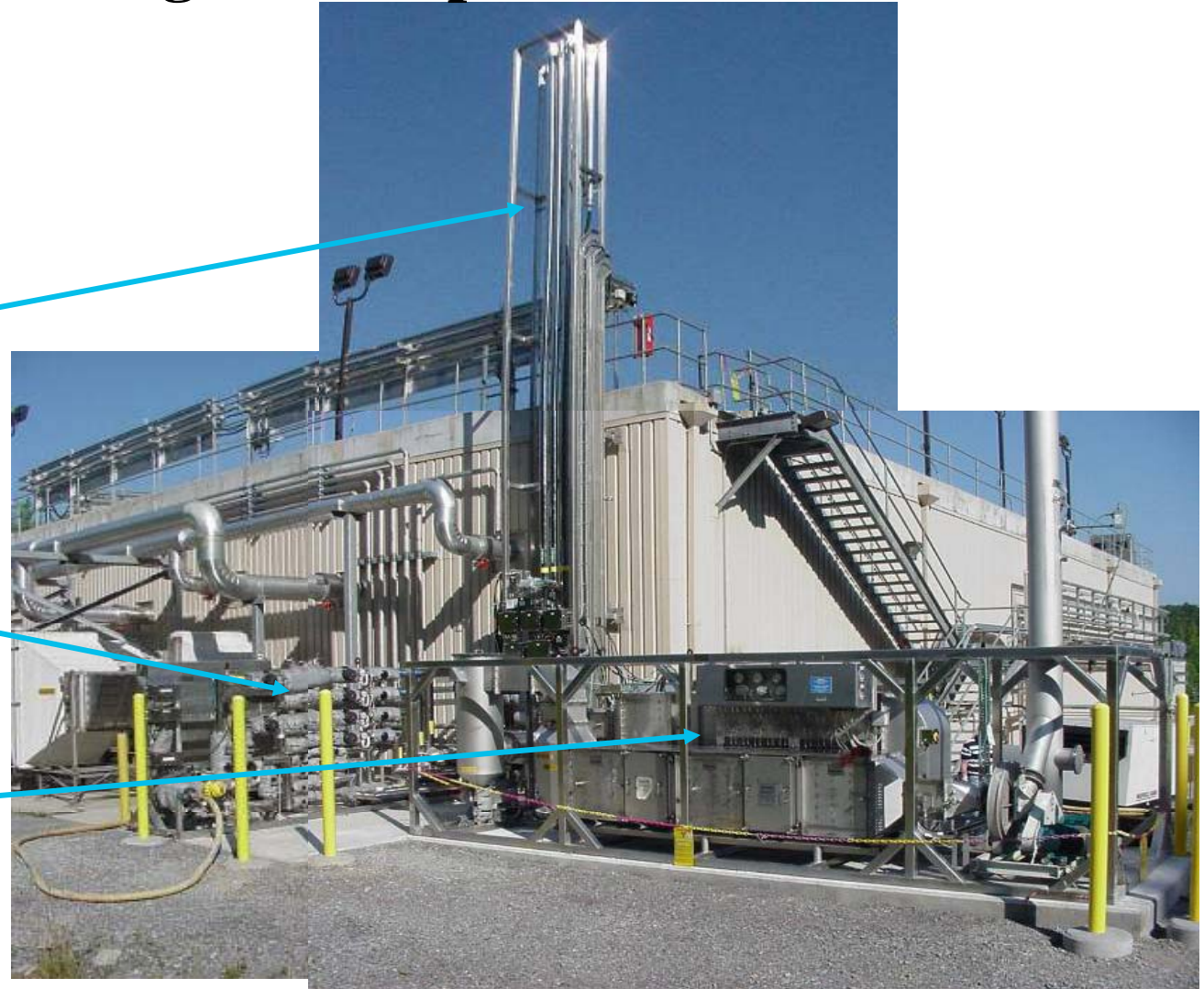
RH Sludge and Supernate

Jet Pump Skid

Valve Skid

Offgas Skid

2- Charge Vessels
installed in Tank W-35



MVST-CI AEAT System



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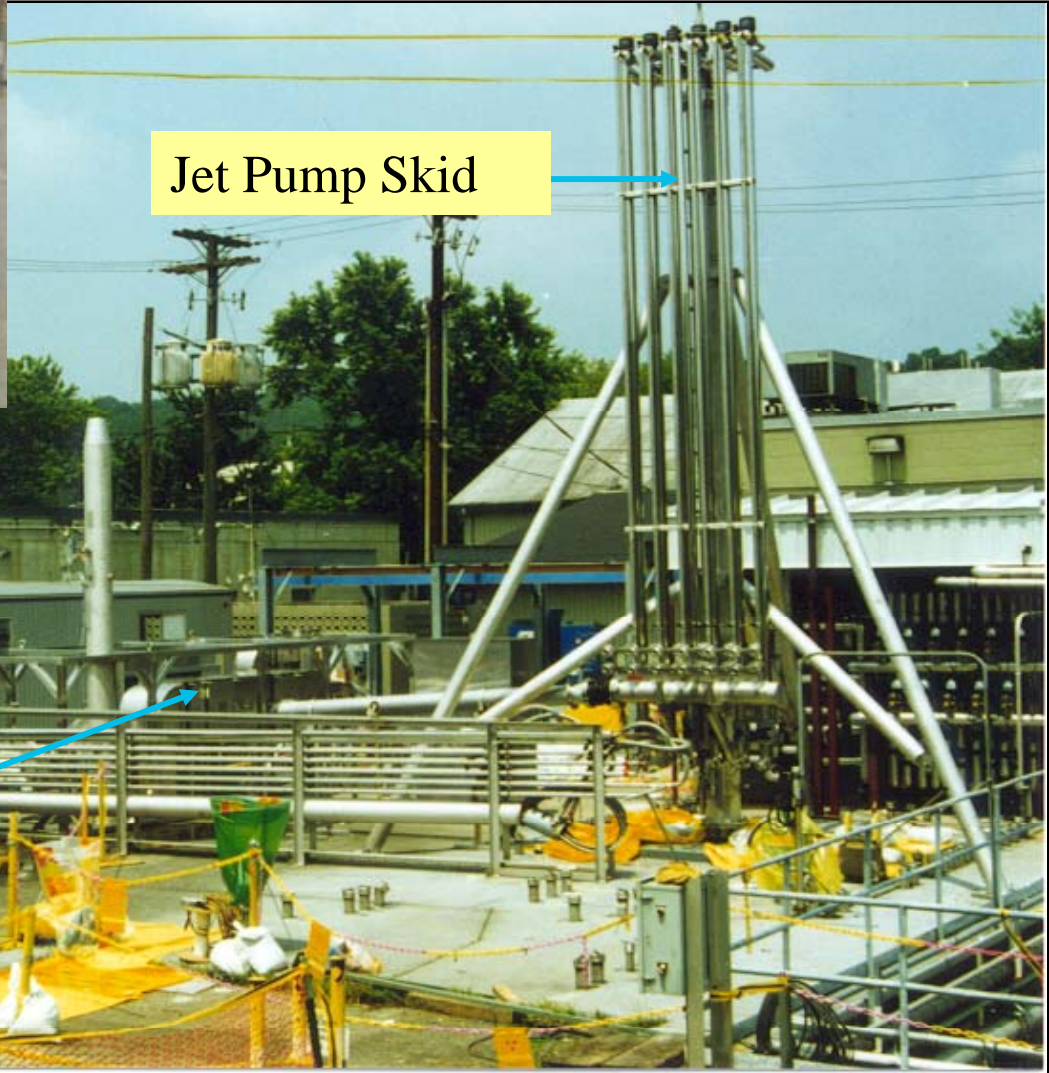
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RH Sludge and Supernate



6 - Charge Vessels
installed in P&VV



Jet Pump Skid

Valve Skid

Offgas Skid

BVEST-CI AEAT System



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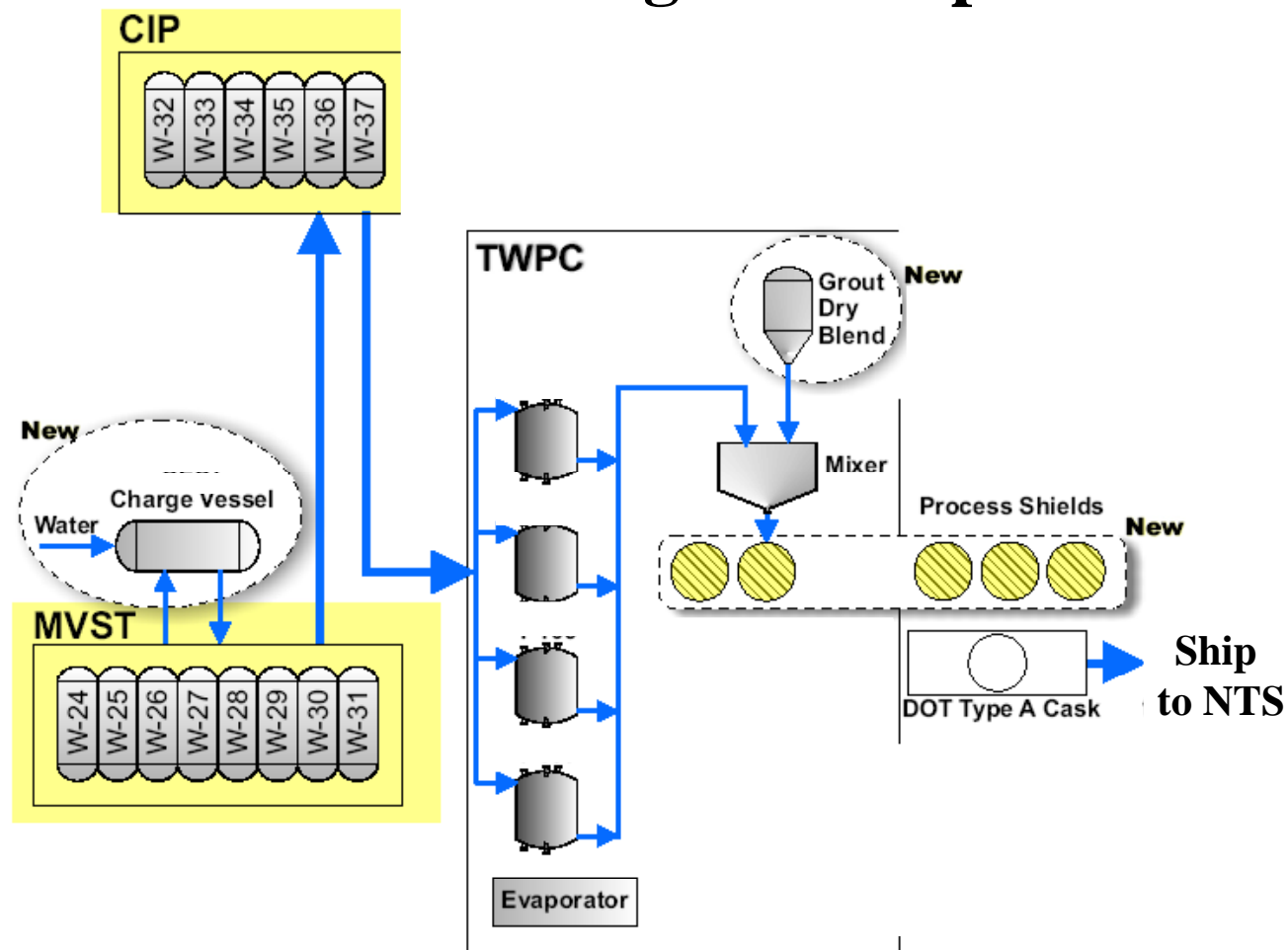
RH Sludge and Supernate

RH Sludge Processing

- Sludge Processing Evaluation Completed in 2007
- Tank samples to be taken this FY and characterized for chemical and radiological properties.
- Treatability studies to be conducted this year and next.
- Conceptual design to be complete this year.



RH Sludge and Supernate



Current Concept: Sludge Solidification & Disposal as LLW

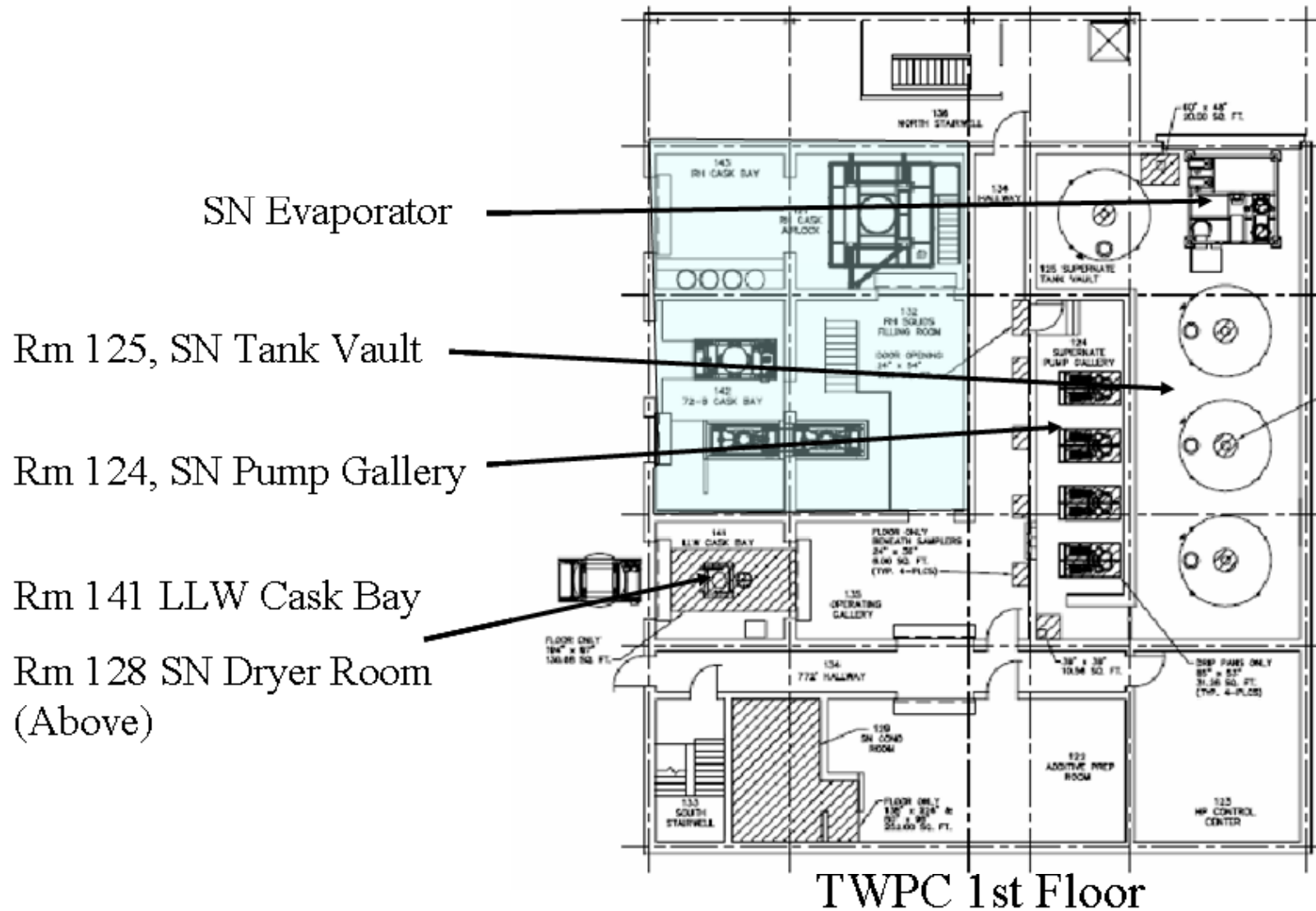


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RH Sludge and Supernate



SN Evaporator During Installation, Room 125



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RH Sludge and Supernate



Supernate Evaporator
HEPA Filter

Supernate Evaporator
Superheater

Room 327



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RH Sludge and Supernate



Room 124, Supernate
Pump Gallery



Room 125, Supernate
Tank Vault



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RH Sludge and Supernate

Receiving Tanks



Hydroclones



Concentrate Tanks



Existing Sludge Processing Equipment

Rooms 323, 324, 325, 326

Current Concept Does Not Use this Equipment



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RH Sludge and Supernate



Room 128, SN Dryer Room
Current Concept converts Dryer to a Mixer



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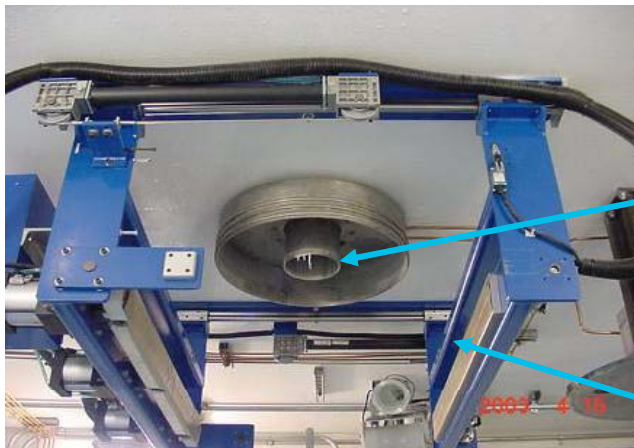
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Room 141, Supernate Cask Pre-Operations

RH Sludge and Supernate

Dryer/Mixer-to-Liner
Bagging Arrangement



Dryer/Mixer
Discharge

Heat Sealer



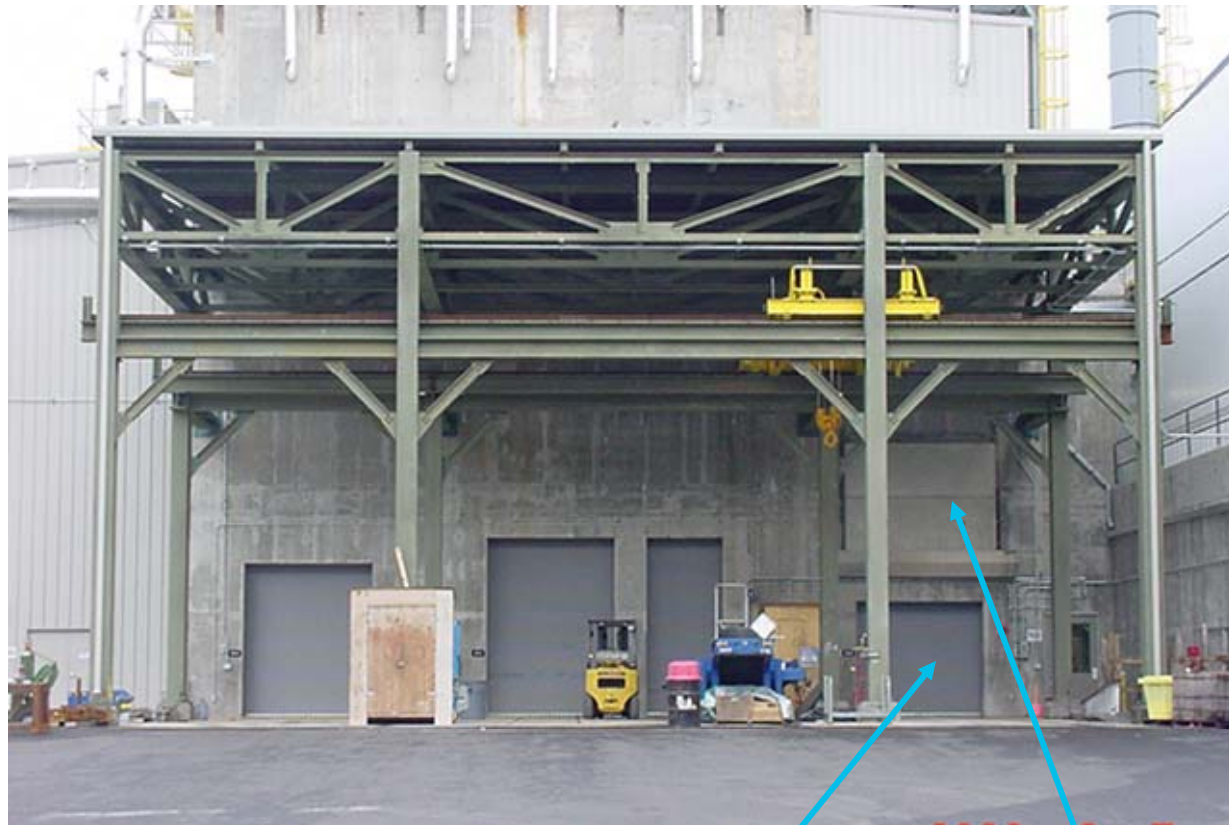
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RH Sludge and Supernate

TWPC (Looking East)



SN & Sludge
Product Door

Dryer/Mixer
Access Panels



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RH Sludge and Supernate



Processed SN Shipment to NTS
Processed SL will be similar



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End of Presentation



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